

PATENT  
Serial Number 09/826,715  
Attorney's Docket No. 00-4023

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (CURRENTLY AMENDED) A method of segmenting acoustic data for use in a speech recognition process, comprising:

receiving frames of acoustic data;

determining cepstral coefficients for each of the received frames of acoustic data;

determining a number of peaks in a plot of the cepstral coefficients for each received frame of acoustic data; and

segmenting the received frames of acoustic data based on the determined number of peaks in the plot of the cepstral coefficients.

2. (CANCELED)

3. (CANCELED)

4. (CURRENTLY AMENDED) The method of claim [[2]] 1, further comprising:

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comparing a first number of peaks in the plot of the cepstral coefficients of a first one of the received frames with a second number of peaks in the plot of the cepstral coefficients of at least a second one of the received frames, wherein the segmenting of the received frames of acoustic data is further based on the comparison of the first and second number of peaks.

5. (CURRENTLY AMENDED) A speech recognition system, comprising:

an acoustic front end configured to:

receive frames of acoustic data,

determine cepstral coefficients for each of the received frames of acoustic data; and

a processing unit configured to:

determine a number of peaks in a plot of the cepstral coefficients for each of the received frames of acoustic data,

compare a first number of peaks in the plot of the cepstral coefficients of a first one of the received frames with a second number of peaks in the plot of the cepstral coefficients of at least a second one of the received frames, and

segment the received frames of acoustic data based on the comparison.

6. (CURRENTLY AMENDED) A computer-readable medium containing

instructions for controlling at least one processing unit to perform a method of

segmenting acoustic data for use in a speech recognition process, the method comprising:

receiving cepstral coefficients corresponding to frames of acoustic data;

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segmenting the frames of acoustic data based on the received cepstral coefficients; and

determining a number of peaks in a plot of the cepstral coefficients corresponding to each of the frames of acoustic data, wherein the segmenting of the frames of acoustic data is further based on the determined number of peaks in the plot of the cepstral coefficients corresponding to each of the frames of acoustic data.

7. (CANCELED)

8. (CANCELED)

9. (CURRENTLY AMENDED) The computer-readable medium of claim 6, the method further comprising:

comparing a first number of peaks in a plot of the cepstral coefficients of a first one of the frames with a second number of peaks in a plot of the cepstral coefficients of at least a second one of the frames, wherein the segmenting of the frames of acoustic data is further based on the comparison of the first and second number of peaks.

10. (CURRENTLY AMENDED) A method of recognizing patterns in acoustic data, comprising:

receiving frames of acoustic data;

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determining cepstral coefficients corresponding to the received frames of acoustic data;

determining a number of peaks in a plot of the cepstral coefficients for each received frame of acoustic data;

determining at least one weighting parameter based on the determined number of peaks in the plot of the cepstral coefficients; and

recognizing patterns in the received frames of acoustic data using the at least one weighting parameter.

11. (CANCELED)

12. (ORIGINAL) The method of claim 10, further comprising:

determining, based on the frames of acoustic data, recognition hypothesis scores using a Hidden Markov Model.

13. (ORIGINAL) The method of claim 12, further comprising:

modifying the recognition hypothesis scores based on the at least one weighting parameter.

14. (ORIGINAL) The method of claim 13, wherein the recognizing patterns in the frames of acoustic data further uses the modified recognition hypothesis scores.

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15. (CURRENTLY AMENDED) A speech recognition system, comprising:
  - an acoustic front end configured to receive frames of acoustic data and determine a number of peaks in a plot of cepstral coefficients for each of the received frames,
  - a processing unit configured to:
    - determine segmentation information corresponding to the determined number of peaks,
    - determine at least one weighting parameter based on the determined segmentation information, and
    - recognize patterns in the received frames of acoustic data using the at least one weighting parameter.

16. (CANCELED)

17. (CURRENTLY AMENDED) The system of claim 15, the processing unit further configured to:
  - determine, based on the number of peaks in the plot of the cepstral coefficients in each of the received frames of acoustic data, recognition hypothesis scores using a Hidden Markov Model.

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18. (PREVIOUSLY PRESENTED) The system of claim 17, the processing unit further configured to:

modify the recognition hypothesis scores based on the at least one weighting parameter.

19. (ORIGINAL) The system of claim 17, the processing unit further configured to:  
recognize patterns in the received frames of acoustic data further using the modified recognition hypothesis scores.

20. (PREVIOUSLY PRESENTED) A method of recognizing patterns in acoustic data, comprising:

receiving frames of acoustic data;  
determining first cepstral coefficients corresponding to the received frames of acoustic data;  
determining second cepstral coefficients corresponding to the received frames of acoustic data;  
determining a first number of peaks in the first cepstral coefficients and a second number of peaks in the second cepstral coefficients;  
determining at least one weighting parameter based on the determined second number of peaks; and

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recognizing patterns in the received frames of acoustic data using the at least one weighting parameter.

21. (CANCELED)

22. (PREVIOUSLY PRESENTED) The method of claim 20, further comprising:  
comparing the determined first and second number of peaks.

23. (PREVIOUSLY PRESENTED) The method of claim 22, wherein the recognizing patterns in the frames of acoustic data is based on the comparison.

24. (ORIGINAL) The method of claim 20, further comprising:  
determining, based on the received frames of acoustic data, recognition hypothesis scores using a Hidden Markov Model.

25. (ORIGINAL) The method of claim 24, further comprising:  
modifying the recognition hypothesis scores based on the at least one weighting parameter.

26. (ORIGINAL) The method of claim 25, further comprising:

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re-ordering the modified recognition hypothesis scores.

27. (ORIGINAL) The method of claim 26, wherein the recognizing of the patterns in the frames of acoustic data further uses the re-ordered modified recognition hypothesis scores.

28. (ORIGINAL) The method of claim 25, wherein the recognizing of the patterns in the frames of acoustic data further uses the modified recognition hypothesis scores.

29. (PREVIOUSLY PRESENTED) A speech recognition system, comprising:  
means for receiving frames of acoustic data;  
means for determining a first number of peaks of cepstral coefficients corresponding to the received frames of acoustic data;  
means for determining a second number of peaks of cepstral coefficients corresponding to the received frames of acoustic data;  
means for determining at least one weighting parameter based on the determined second number of peaks; and  
means for recognizing patterns in the frames of acoustic data using the at least one weighting parameter.

30. (CURRENTLY AMENDED) A data structure encoded on a computer readable medium, comprising:

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cepstral coefficient data corresponding to each frame of a plurality of frames of acoustic data, the cepstral coefficient data including a number of peaks in a plot of cepstral coefficients corresponding to each frame of acoustic data; and segmentation data indicating segmentation of the frames of acoustic data based on the cepstral coefficient data including the number of peaks.

31. (PREVIOUSLY PRESENTED) An acoustic recognition system, comprising:
  - an acoustic front end configured to:
    - receive frames of acoustic data and determine a number of peaks of cepstral coefficients for each of the received frames;
    - a processing unit configured to generate, based on the determined number of peaks, end frame numbers for each phoneme or Hidden Markov Model (HMM) state contained in the received frames; and
    - a trainer/HMM decoder configured to use the generated end frame numbers for determining weighted scores that can be used for recognition of acoustic events contained in the received frames of acoustic data.

32. (PREVIOUSLY PRESENTED) An acoustic recognition system, comprising:
  - an acoustic front end configured to receive frames of acoustic data and determine a number of peaks of cepstral coefficients for each of the received frames; and
  - a processing unit configured to:

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generate, based on the determined number of peaks, end frame numbers

for each phoneme or Hidden Markov Model (HMM) state contained in the

received frames of acoustic data, and

determine weighted scores based on the generated end frame numbers that

can be used for recognition of acoustic events contained in the received frames of

acoustic data.